10 Sincere Tips for (Future) Academicians

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Abstract 10 realistic tips for any person who is considering to become an academician.

Despite of the existence of a vast literature corpus on the preliminary basis of university research, basically "how to write a Ph.D. Thesis", there are not honest, reliable and interesting documents about the day after of the Thesis end. Perhaps you can find a lot of tacit knowledge and some informal talks with seniors, but never a comprehensive perspective about what you really need to do. This is my small contribution, 10 tips for future researchers:

1. Publish or perish

You shall have no other tip but this one. Publishing is the backbone of any academic career. You need to publish as much as possible and at best rated journals in your research field. You must know that there are several ways of quantifying your work once it has been released, all of them connecting how is your impact into your field's experts. Bibliometrics measures a scientific writer's influence according to several possible models, some of them are here listed:

- Impact Factor: The impact factor, proposed by Eugene Garfield, is a ratio between citations and recent citable items published. The impact factor (IF) is a measure of the frequency with which the average article in a journal has been cited in a particular year. It is used to measure the importance or rank of a journal by calculating the times its articles are cited. Thus, the impact factor of a journal is calculated by dividing the number of current year citations to the source items published in that journal during the previous two years by the number of published articles in that journal during the previous two years. Journal Citation Reports calculates and publishes the annual impact factors for journals. A higher impact factor generally indicates that this journal's articles have been cited more..
- Hirsch's h-Index: The h-index was proposed by Jorge Hirsch in 2005 as an alternative to the impact factor. The h-index quantifies scientific productivity and the impact of a scientist based on the set of his/her most quoted papers and the

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number of citations that he/she has received in other people's publications. For example, an author or journal with an h-index of 30 has written at least 30 papers that have each had at least 30 citations. Thus, a higher h-index indicates more publications that have been cited more often.

- I10-Index: The i10-index indicates the number of academic publications an author has written that have at least ten citations from others. It was introduced in July 2011 by Google as part of their work on Google Scholar, a search engine dedicated to academic and related papers
- RG Score: RG Score is a metric that measures scientific reputation based on how all of research is received by your peers, and by 'received' they mean the sum of impact factor of each publication, plus expertise giving answers to Researchgate platform of forums, as well as the interested of being friend of you or liking actions over your uploaded papers.
- G-index: The g-index is an index for quantifying scientific productivity based on publication record. It was suggested in 2006 by Leo Egghe. The index is calculated based on the distribution of citations received by a given researcher's publications: Given a set of articles ranked in decreasing order of the number of citations that they received, the g-index is the (unique) largest number such that the top g articles received (together) at least g2 citations.

Besides of any real attempt into evaluate your quality as researcher, there is also a fight of business companies about the control of the quality process: ISI Web of Knowledge versus Google Scholar, Bill Gates with investments into Researchgate….

The main idea you must have in mind is that every publication will be quantified and your CV will be converted into a number. You are that number, and nothing more. Your papers will be stored and catalogued adding information to tour electronic ID (ORCID number, ResearcherID,… remember to create these identities and to label with them your papers). Here, the idea is to make grow this number, because will turn you into a sexy academic. How do you can obtain bigger numbers? Well, it is easy, publishing at better ranked journals. Each decent journal has an Impact Factor (if not, perhaps it is a great journal, but out from official recognition) according by how their published papers are quoted by experts. Although the journal do not certify you that you'll be highly cited in case you are published there, the more important journal the more attraction receives from experts. All experts have no much time to read and try to bet for winner horses…which should be at winner journals (it is not always the case, as the *sleeping beauties* certify). You must take also into account that best journals have big rejection rates.

You'll be also faced to the reviewer's phenomena: some obscure guys with absolute power about the future of your publication. Be polite and try to follow their advice, in case of rejection, or at least to look as it. Reviewers are hated but someday you'll also be one. Academia life is close to Anakin Skywalker- Darth Vader transformation, but with a great difference: the change is continuous and following both sides. Although the Force/Truth is out there, the point is that you are strug-

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gling all the time with your problems and the problems of the others. So, be calm and try to be positive.

My tip here is the same I'd give you Friday's evening: choose the best partner you can according to your interests, but the best one. Start from higher ranked journals and if you are openly rejected, use the paper reviews (if they made them...because this is a practice increasingly abandoned) to improve your paper and sent to a second level journal. If after some years you have a nomadic paper, low a lot your ego and sent to some basic journal (better published that into the HDD). Publish papers, book chapters and books, following this serialization of difficulty. Take care and try to avoid the existence of flying Dutchman papers, that navigates during years through the cyberspace, from platform to server.

2. Cooperate

If you work with other guys the main benefits are exponentially increased because you improve your publishing production ratios working less. This is a directly related to tip number one about publishing. Here, the idea is to chop ('to discretize', in academic terminology) the paper into several sections that are written by different authors, having in mind that the final result must not be a Frankenstein, but a real piece of research. You work a little and with cooperative work add easily a new line into your CV. This is the reason by which senior researchers with own research groups and several Ph.D. students under their ~~exploitation~~ guidance, are able to produce inhumane amounts of papers each year.

A different question will be how you'll decide the sequential order of authorship (ego battles). There are several traditions about the authorship placement: supposedly, the first author is the person in charge of the research and who deserves the biggest honors for the results achievements. But it can change according to research field or personal decisions. But above all, try to avoid being a ghost author: an author who makes contributions but it is not listed (statisticians, reviewers, lab workers, group members,…).

Thanks to the Internet, cloud software and teleconferences this cooperation can be done with people located very far and with whom you've never talked personally. There dozens of apps or programs that can help you to maintain this online team research (Skype, Dropbox, Google Hangouts, Github, Facetime, Bitrix24, HipChat, Hall, Pie, eXo Platform, …)

But, and all great histories have a 'but', you must be careful: the distribution among authors is not only about benefits, but also includes personal damages. In case of fraud or misconduct or one of the authors, all the rest are considered as accomplices. For example, during one of the last famous cases of scientific fraud, American stem-cell researcher Gerald Schatten had his name listed on a paper co-authored with Korean Hwang Woo-suk. Woo-suk manipulated data without Schatten knowledge, but a panel at his university found that his lack of overseen research made him guilty of research misbehavior. Yoshiki Sasai, a Japanese

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stem-cell scientist, committed suicide after being involved involuntarily into a co-researcher fraud.

3. The knowledge market

The second important aspect of academic world is the network of friendships and professional comrades or contacts that you can create all over the world. The people you'll meet and with which you'll discuss your ideas are those who will judge your research and recommend or reject your ideas/projects/grants. There are several places at which you'll find them: conferences, seminars, workshops…basically designed to create human direct relationships and to justify annually the received funds. It is very important to invest properly your reduced budget: the better meetings, the better results. It is very interesting to attend to conferences that include selected papers into good Proceedings or special journal numbers (don't forget tip number ONE).

4. University 2.0

University 2.0 beyond classic spaces, there are social nets, where the battle of being acknowledged is really intense. There are also good tools to be automatically informed about topics, people or bibliography. The social networks are the place where everybody shares their best experiences and nice sides. There are also special academic social networks to which you should be present: ResearchGate, Academia, Linkedin (for academic), as well as Facebook, Twitter or Instagram (for general purposes), all them can be employed to have a fast but sometimes good view about the quality of someone's research. In some cases personal websites are still useful, as well as institutional websites, but usually are not updated by their administrators.

Here I must give you another idea: *be audacious and* do not hesitate to contact directly with your scientific heroes, the silence is a possibility, but without trying, you do not obtain anything. A sub-tip: share only *already published* materials…sharks are there out, waiting for your ideas…but once published, disseminate them at so many platforms as possible (be careful about copyrights, but….). Try to share ALL your published results, those with permission or through pre-prints, but share your ideas. Your existence is calibrated thanks to the presence of your published and available ideas. Publish, therefore I do exist.

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5. Tradition versus innovation.

The power of your ideas will be the key to publish and to obtain recognition. Science evolves slowly and scientific communities are prone to accept new results when they belong to a grounded knowledge. To follow the tradition is a good option to have a quiet and more foreseeable career. For those with forces enough to try to change ideas, procedures and techniques there is the innovation road: much more uncertainty but at the same time with bigger rewards if you are not wrong. At a certain level, scientific CV is like risk investment and stock markets: the more risky, the more juicy. But as I've told previously, research field are always in a hard tension: on the one hand they want to conquer new results, ideas and benefits, but on the other hand they are conservative and use to push those who suggest new ways of doing things. Consider for example a physician who want to make a surgery improvement: she/he needs to demonstrate that a new technique can provide better results once compared with already existing ones; during the implementation of new techniques things fail and not because of the own techniques, but because of unskilled practitioners or bad reception of these ideas. Successful ideas can even lead you to ostracism, like happened to Ignaz Semmelweis. And sometimes bad ideas which are constantly failing are difficult to abandon for the wrong reasons (Lysenko case in Russia, for example).

There is a second subsection here: *Over-specializated or free-rider?* Academic publications, conferences and close events tend to be overspecialized and this is the normal path for a young researcher: to know a lot about a tiny knowledge area in which in a few years you can become the main reference, and also an ignorant about all the rest of knowledge. This path is welcomed in academic circles, and is a secure (and bored) option. The second way to make a career is to abandon any traced path and pick up best ideas from any place you find them. This turns you into a free-rider and it is often punished at grant/funding procedures. But you'll feel also free. Poor but free, or bored but with money, this is the true dilemma. So, choose with precision your strategy, because your life will follow these lines for years.

6. Unpaid but paying?

You receive your basic income from teaching duties at any university, but what they really expect from you and looked carefully before to hire you is publications and funding capacity. Once paid for teaching, the rest of activities (journal reviewer, book editor, writer of books/chapters/papers/reports, conference organizer, improving of teaching skills and preparation, advising…is for free. You'll never receive any penny from it…..even more: perhaps you'll pay to publish into the last dead trap of academic publishers, the 'free access' journals. Free for reader, paid by authors. Don't angry about this and try to do not pay money to publish, nor to

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access to your publications! The problem is that most powerful research groups CAN pay for this service and then the rest of guys in the field are forced to natural death or to survive at the boundaries of second-class journals. Besides, main governmental ministries are forcing/asking to public researchers to publish in open access their researches: then, a paradox is placed to, because a researcher must pay to publish, but never receives more than some weird coefficient for an electronic CV.

7. Do not underestimate colleagues:

This tip is very important too. Academic career is a long-term race. In a few years any contact can be crucial for your research. The future of academic positions is a fascinating and obscure, not following always the excellence of CV (yes, at the end it is how it works). Defend your ideas anywhere, with conviction, but be as well polite and respectful with others, because "Revenge is a dish best served cold". That young guy who looks as a bad researcher and who you could easily define as 'dumb' could be working in a few years in a place of your outmost interest. You need to be a good person, but also to look as it. Be nice and try to look at the best things of those who are around you: surely, you are not perfect.

Here is very important another related factor: best colleagues are not always the best or brightest minds into the field. Even your Ph.D. advisor can be a not first-line researcher, but be extremely good showing you're the best choices and introducing yourself to the best contacts and events. Because of the long-rung nature of academic career, best partners are not just the more intelligent or beautiful (according to any scale you have in mind). This world is full of narcissists who will not be of any help for a real academic career if you take them as an example or guides/partners.

8. Funds, Grants & Research:

Money, money, money…to make research you need funds, and the fight for them is very, very competitive. It's a war, in fact. And you know that beyond any naïve idea about wars and honor codes, wars are wars. The idea is to have great ideas and to convince the other that these ideas are great. This is not necessarily an obvious process: good ideas not always shine without doubt over the rest of mediocre or grey ideas. Then, your writing skills, as well as the visual impact of them is of the outmost importance.

Besides, you must look carefully to your best funding options in order to not to waste your time and efforts into a non –realistic option. Usually, those who have the budget want to believe that you'll be the next revolution but at the same time need some guarantees about the feasibility of your ideas. Therefore, you cannot

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convince a government officer about your future success if you have not credentials that justify them. It is a matter of emotional and intellectual conditioning. To look at budget officers as Skinner's shaved dogs can be really helpful. And one important thing here: please, do not try to convince them that some section of the required materials is not necessary: each line of the petition forms is sacred to them. British or American English? Just do it. APA, MLA or Chicago citation styles? Yes, Sir. PDF, Latex or Word formats? No problem, I'll do it according to the guidelines. Fulfill with patience and devotion each of these lines. Yes, you are losing your time, but they do not want that you make it obvious. Follow the leader and try to obtain your new CV's line.

At the same time you need not to trust in a single option: funds are like occasional partners in a Saturday's night, you need to be open to several possibilities and do not to feel bad is someone answers you 'not', because at the same time you have several open options. Be patient. Work hard. Be prepared to fail. As says a friend of mine: "Dream big and dare to fail".

Finally, think on the reality of the "Matthew effect": the Matthew effect (or accumulated advantage) is the phenomenon where those who have more funding and resources get more, while those who have less, get even less or nothing at all. So, don't waste your time looking desperately at senior researchers of annoying excellent young ones who are enjoying success after success (grants, honors, keynotes, editorial interests, media interest,…), because it is insane. Instead of it, put yourself affordable tasks and work hardly on them, cross your fingers and upload everything to the Internet. Chance is the next step.

9. Teaching and affiliation:

If you are not affiliated contractually to some university, you don't exist. You need to be always under an academic umbrella, with official address and electronic identity. So, try to have any minimal contract of association with an official institution. Here, the greatness of your host is also a key factor for your future, but not a deterministic law. Not all ex-Ivy Leavy students are placed at best jobs or have the best ideas. Nevertheless, this fact is an important fact for their CV and personal relationships.

10. Failures and the iceberg effect.

Finally, my last thoughts are devoted to the miseries of academic life. The academic career is full of failures, rejections, mistakes and long waiting periods under uncertainty (job, economical,..). Here do not survive the best ones, but only the best mentally prepared and hard-workers. Chance is also a small part of all this process, but do not overestimate it: you must work very hard and be faced to mul-

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tiple negative feedbacks: from publications, grants, funds petitions, prizes, chairs,…..behind every success there are multiple painful failures, like a floating iceberg, you only see a part of the whole work. You must have something in mind: a perfect CV does not exist. If you have published a lot, then you have not administrative experience; if you've travelled a lot, you cannot devote your efforts into an important question; if you've published a lot, not all editorials have the same quality (perhaps you've written a huge amount of papers, but not books, or vice-versa). You must also consider that good CV are not just evaluated as a whole, but taking into consideration the last 5 years of activity. As a conclusion we can affirm that the aim of a good CV is to make you unhappy, during all your life. Doesn't matter what do you do, it never is enough. And take for granted that in in case you are approaching to some good standard your personal live is then close to zero. You are never too much clever. And even less when you work with interdisciplinary teams and you discover that have not idea at all about very important things.

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